Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims:

Claim 1 (original): A method for storing data on and retrieving data from a magnetic tape comprising:
receiving data when operating in a write mode;
passing magnetic tape across an electromagnetic head;
varying drive current to the electromagnetic head according to the data when operating in a write mode;
sensing current induced in the electromagnetic head when operating in a read mode;
sensing vibration imparted to a tape transport mechanism; and
adjusting position of the electromagnetic head according to the sensed vibration.

Claim 2 (original): The method of Claim 1 wherein sensing the vibration comprises generating an electrical signal according to the vibration experienced by a tape transport mechanism.

Claim 3 (original): The method of Claim 1 wherein adjusting the position comprises:
generating a correction signal based on vibration information; and
positioning the electromagnetic head according to the correction signal.

Claim 4 (original): The method of Claim 3 further comprising limiting vibration frequencies imparted to the tape transport mechanism in accordance with a frequency response of positioning the electromagnetic head.

Claim 5 (original): The method of Claim 3 wherein generating a correction signal comprises:

receiving a vibration indicative signal; and

modifying the vibration indicative signal through compensation in order to improve the response of positioning the electromagnetic head.

Claim 6 (original): The method of Claim 3 wherein generating a correction signal comprises:

receiving a vibration indicative signal; and

modifying the vibration indicative signal through prediction in order to improve the response of positioning the electromagnetic head.

Claim 7 (original): The method of Claim 6 wherein modifying the vibration indicative signal through prediction comprises:

analyzing the spectral composition of the vibration indicative signal; and

predicting a future vibration value according to the spectral composition.

Claim 8 (original): The method of Claim 1 further comprising:

sensing a position of the magnetic tape relative to the electromagnetic head; and

adjusting the position of the electromagnetic head according to the sensed position of the magnetic tape.

Claim 9 (original): The method of Claim 1 further comprising precluding variations in the drive current to the electromagnetic head when the sensed vibration exceeds a pre-established rate of change.

Claim 10 (original): An electromagnetic head assembly comprising:

electromagnetic head;

vibration sensor capable of sensing vibration imparted to the electromagnetic head assembly; and

head positioning unit capable of adjusting the position of the electromagnetic head according to the sensed vibration.

Claim 11 (original): The electromagnetic head assembly of Claim 10 wherein the vibration sensor is attached to the electromagnetic head assembly and is capable of generating a vibration indicative signal.

Claim 12 (original): The electromagnetic head assembly of Claim 10 wherein the head positioning unit comprises:
correction signal generator capable of generating a correction signal based on vibration information received from the vibration sensor; and
head position actuator capable of positioning the electromagnetic head according to the correction signal.

Claim 13 (original): The electromagnetic head assembly of Claim 12 further comprising a vibration limiter capable of limiting vibration frequencies of a chassis whereon the electromagnetic head is mounted in accordance with the frequency response of head positioning.

Claim 14 (original): The electromagnetic head assembly of Claim 12 wherein the correction signal generator comprises:
vibration signal receiver capable of receiving a vibration indicative signal from the vibration sensor; and
vibration signal processor capable of modifying the vibration indicative signal by applying compensation in order to improve the response of head positioning.

Claim 15 (original): The electromagnetic head assembly of Claim 12 wherein the correction signal generator comprises:
vibration signal receiver capable of receiving a vibration indicative signal from the vibration sensor; and
vibration signal processor capable of modifying the vibration indicative signal by applying prediction in order to improve the response of head positioning.

Claim 16 (original): The electromagnetic head assembly of Claim 15 wherein the vibration signal processor comprises:
spectrum analysis unit capable of analyzing the spectral composition of the vibration indicative signal; and
prediction unit capable of predicting a future vibration value according to the spectral composition.

Claim 17 (original): The electromagnetic head assembly of Claim 10 further comprising:
tape position sensor capable of generating a tape position signal according to the position of the magnetic tape
wherein the head positioning unit further is capable of adjusting the position of the electromagnetic head according to the tape position signal.

Claim 18 (original): The electromagnetic head assembly of Claim 10 further comprising a comparison unit capable of generating a signal that precludes variations in the drive current to the electromagnetic head when the sensed vibration exceeds a pre-established rate of change.

Claim 19 (original): A magnetic tape drive comprising:
tape transport mechanism for transporting magnetic tape;
interface module capable of generating a head drive signal according to received data;
electromagnetic head capable of generating a magnetic field according to the head drive signal;
accelerometer that senses vibration imparted to the tape transport mechanism in a control axis; and
head position control system capable of adjusting the position of the electromagnetic head along the control axis according to the sensed vibration.

Claim 20 (original): The magnetic tape drive of Claim 19 wherein the accelerometer is attached to the tape transport mechanism and is capable of generating a vibration indicative signal according to vibration along the control axis.

Claim 21 (original): The magnetic tape drive of Claim 19 wherein the head position control system comprises:
correction signal generator capable of generating a correction signal based on the vibration indicative signal received from the accelerometer; and
head position actuator capable of positioning the electromagnetic head according to the correction signal.

Claim 22 (original): The magnetic tape drive of Claim 21 further comprising an isolation mount capable of limiting vibration frequencies of the tape transport mechanism in accordance with the frequency response of head positioning.

Claim 23 (original): The magnetic tape drive of Claim 21 wherein the correction signal generator comprises:
vibration signal receiver capable of receiving a vibration indicative signal from the accelerometer; and
vibration signal processor capable of modifying the vibration indicative signal by applying compensation in order to improve the response of the head position actuator.

Claim 24 (original): The magnetic tape drive of Claim 21 wherein the correction signal generator comprises:
vibration signal receiver capable of receiving a vibration indicative signal from the accelerometer; and

vibration signal processor capable of modifying the vibration indicative signal by applying prediction in order to improve the response of the head position actuator.

Claim 25 (original): The magnetic tape drive of Claim 24 wherein the vibration signal processor comprises:
analog-to-digital converter that creates a digital representation of the vibration indicative signal;
memory capable of storing instructions;
digital signal processor capable of executing instruction sequences; and
digital signal processing instruction sequences stored in the memory comprising:
spectrum analysis instruction sequence that, when executed by the digital signal processor, minimally causes the processor to compute a transform of the digital representation,
prediction instruction sequence that, when executed by the digital signal processor, minimally causes the digital signal processor to compute a future value of the digital representation according to the transform, and
digital-to-analog converter that creates an analog control signal according to the future value of the digital representation.

Claim 26 (original): The magnetic tape drive of Claim 19 further comprising:
tape position sensor capable of generating a tape position signal according to the position of the magnetic tape wherein the head position control system further is capable of adjusting the position of the electromagnetic head according to the tape position signal.

Claim 27 (original): The magnetic tape drive of Claim 19 further comprising a comparator that generates a signal that precludes variations in the drive current to the electromagnetic head when the derivative of the sensed vibration exceeds a pre-established value.

Claim 28 (original): A tape head positioning system comprising:
means for imparting information onto magnetic tape;
means for supporting the information imparting means;
means for sensing vibration applied to the supporting means; and
means for adjusting position of the information imparting means to compensate for potential errors induced by the vibration.

Claim 29 (original): The tape head positioning system of Claim 28 wherein the vibration sensing means generates an electrical signal according to the vibration experienced by the supporting means.

Claim 30 (original): The tape head position system of Claim 28 wherein the position adjusting means comprises:
means for generating a correction signal according to vibration sensed by the vibration sensing means; and
means for adjusting the position of the information imparting means according to the correction signal.

Claim 31 (original): The tape head position system of Claim 30 further comprising means for limiting vibration frequencies imparted to the supporting means in accordance with the frequency response of tape head positioning.

Claim 32 (original): The tape head position system of Claim 30 wherein the correction signal generating means comprises:
means for receiving a vibration indicative signal; and
means for modifying the vibration indicative signal through compensation in order to improve the response of tape head positioning.

Claim 33 (original): The tape head position system of Claim 30 wherein the correction signal generating means comprises:
means for receiving a vibration indicative signal; and
means for modifying the vibration indicative signal through prediction in order to improve the response of tape head positioning.

Claim 34 (original): The tape head position system of Claim 33 wherein the signal modifying means comprises:
means for analyzing the spectral composition of the vibration indicative signal; and
means for predicting a future vibration value according to the spectral composition.

Claim 35 (original): The tape head position system of Claim 28 further comprising:
means for sensing the position of the magnetic tape; and
means for adjusting the position of the information imparting means according to the sensed position of the magnetic tape.

Claim 36 (original): The tape head position system of Claim 28 further comprising means for precluding variations in the drive current to the electromagnetic head when the sensed vibration exceeds a pre-established level or rate of change or any other quantity deemed suitable for the purpose.